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/Collector's Note: Source has had occasion to review several Soviet chemical journals in the past few weeks. He deems the quotations and extractions appearing below to be the most significant information contained in the aforementioned journals. His comments which immediately follow the quotations are based on some familiarity and experience with Soviet chemistry./

1. Izvestiya Akademii Nauk SSSR., Otdeleniye Khimicheskih Nauk., 1953 N.6 Page 957, "Adsorption of the Mixture of Gases", written by B. P. Bering and V.V.Sierpinskiy

   a. "Adsorption of Water Vapor and Ethyl Chloride by Activated Charcoal"

      (1) "The authors were not able to apply conventional methods for adsorption of the mixture of water vapor and other gaseous components because ethyl chloride has a very low boiling point (12.2°c). They employed their own method which they called, 'Combination of the Volumetric and Gravimetric System'.

      (2) "Experiments were carried out at 74°c, ranges of water vapor pressure were maintained from 0 to 0.85A, and for ethyl chloride ranges of pressure were from 0 to 180 mm of mercury.

      (3) "Partial pressure of ethyl chloride is sharply decreased when partial pressure of water vapor reaches about 0.5 atmospheric pressure. If a water vapor pressure is continuously increased the ethyl chloride is almost completely dislodged from activated charcoal.

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(4) "The authors found that with application of higher pressures the adsorption of water vapor and ethyl chloride by activated charcoal tends to adsorb five molecules of water vapor and one molecule of ethyl chloride."

2. Comments:

a. Charcoal when activated is especially effective in adsorption, probably because of the large surface area provided by its porous structure. Its use in gas masks is dependent upon this fact.

b. According to information gleaned from Polish scientific journals the USSR employs birch-tree charcoal for use in gas masks. [redacted] 50X1 the USSR definitely utilized birch-tree charcoal.) The Soviets used birchwood cut into approximately 1/2 centimeter cubes and treated it with a 10 percent water solution of zinc chloride at temperatures about 110° centigrade. The next operation leads to the removal of zinc chloride from wood and drying the charcoal to approximately 275° centigrade. The zinc chloride is regenerated and the charcoal is tested by chlorine.

c. It is my impression that Soviet chemists are working intensively in catalysis and adsorption. I would say that the above experiment with charcoal results from several needs:

(1) For decoloration of industrial elements.

(2) Since new combat gases have been introduced in the last ten years, the Soviets may be experimenting with charcoal as an adsorptive in order to determine its potential use against such developments.

d. There is nothing extraordinary or unusual about the research involved. As a matter of fact I would say that such investigations were begun at least thirty-five or [redacted] papers on the subject [redacted] 50X1

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